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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,332	10/20/2003	Goro Tamai	GP-302819	1376

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EXAMINER	
BOTTORFF, CHRISTOPHER	
ART UNIT	**PAPER NUMBER**
3618	

DATE MAILED: 10/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/691,332	TAMAI ET AL.	
	Examiner	Art Unit	
	Christopher Bottorff	3618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 August 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The amendment filed August 16, 2006 has been entered. Claims 1-11 are pending.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Claims 1, 9, and 11, as amended each recite the new limitation "wherein said electronically controlled switch isolates said first battery from said second battery upon startup of said internal combustion engine". However, this aspect of the invention was not presented in the disclosure as originally filed. In the original specification, paragraph 0014, lines 4-5, state "[d]uring cold or weak-battery key crank events, the ALI 20 isolates the ECM from the large voltage dips of the ESS/starter battery." This is the closest statement in the original disclosure to the new claim limitation. In the original disclosure, the isolation occurs between the ECM (electronic control module) and the starter battery during engine start (crank events), not between the first and second

batteries. Also, there is no disclosure that a relationship exists between the ECM and a second battery such that if the ECM is isolated from the starter battery, the second battery is also isolated from the starter battery. Although the Figure depicts ALI 20 coupling batteries 16 and 18, this depiction does not explain how ALI 20 operates relative to the two batteries at the time of engine start. Deriving the claimed battery relationship at the time of engine start from the original disclosure involves invention on the part of the reader. Therefore, this new claim limitation represents impermissible new matter in the claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 2, 4, 5, and 9-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Bolz et al. US 6,919,648.

Bolz et al. disclose a vehicle powertrain control system comprising an electric motor drive system ISG and inverter 1, a first battery B1 coupled to the electric motor drive system, an electronically controlled switch S3 coupled to the first battery B1, a second battery B2 coupled to the electronically controlled switch S3 and coupled to vehicle accessories, and an internal combustion engine BKM operatively coupled to the electric motor drive system. See Figure 4 and column 6, lines 53-57. The first and second batteries B1, B2 are directly electrically coupled when electronically controlled switch S3 is closed. See Figure 4. Moreover, this direct electrical coupling occurs at least partially at DC/DC converter 3, and converter 3 steps-up or steps-down the voltage of one battery such that a common voltage level is present at the electrical coupling when switch S3 is closed. See column 9, lines 9-14. Also, the electronically controlled switch S3 applies power from the second battery B2 to supplement the first battery B1 during select operating conditions. See column 7, lines 16-20.

DC/DC converter 3 is coupled to the electronically controlled switch S3, wherein the electronically controlled switch S3 applies power from the DC/DC converter 3 to supplement the first and second batteries. That is, power in the DC/DC converter 3, which originates from second battery B2, will supplement first battery B1 when B2 is used to charge B1. See column 7, lines 16-20. Furthermore, power in the DC/DC converter 3, which originates from first battery B1 or the generator, will supplement the second battery B2 during charging of B2. See column 7, lines 13-16. DC/DC converter

3, first battery B1, and second battery B2 share a common electrical line of coupling along the conducting members that connect the batteries, switch S3, and DC/DC converter 3 together. This common electrical line of coupling serves as a common electrical reference and converges at DC/DC converter 3 when the electronically controlled switch S3 is closed. See Figure 4. Also, the first and second batteries comprise lead acid batteries and an inverter 1 is coupled to a motor of the motor drive system. See column 6, lines 27 and 44-45.

Numerous limitations of the claims attempt to define the apparatus in terms of function and intended use. For example, the limitation in each of claims 1, 9, and 11 stating that the switch "isolates said first battery from said second battery upon startup of said internal combustion engine" defines the switch in terms of how the structure functions. However, it is well settled that claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Danly*, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device *is*, not what it *does*." *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). (emphasis in original). Furthermore, claims containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all of the structural limitations of the claims. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). Here, Bolz et al. disclose all of the structural limitations of the claims. Moreover, column 9, lines 1-5, of Bolz et al. disclose that switch S3 performs the claimed isolation. Note that since switch S4 cannot be

conducting when switch S3 is non-conducting, placement of switch S3 in the non-conducting position as described in column 9, lines 1-5, results in battery isolation.

In regard to claim 11, lines 5-7 require the first and second batteries to "operate" at a common electrical connection. However, since the batteries are distinct structures located apart from one another, they literally "operate" at different locations rather than at common location. Consequently, "operate" has been interpreted broadly for the purposes of examination such that electricity emanating from the batteries that exists at a common location qualifies as battery operation. In Bolz et al., the electricity produced by each of batteries B1 and B2 exists simultaneously at common electrical connection S3 and common electrical connection 3 when switch S3 is closed. After DC/DC converter 3 has converted the voltages, the voltage at a common electrical connection (S3 or 3) is substantially the same.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bolz et al. US 6,919,648 in view of Rose, Sr. US 6,472,790.

Bolz et al. do not disclose that the motor is an induction type motor. However, Rose, Sr. teaches the desirability of providing the motor portion of a starter generator as

an induction type motor. See column 5, lines 22-28, and column 1, lines 20-21. From this teaching of Rose, Sr., providing the motor portion of the starter generator of Bolz et al. as an induction type motor would have been obvious to one of ordinary skill in the art at the time the invention was made. This would utilize a motor type with performance characteristics that are well established and reliable.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bolz et al. US 6,919,648 in view of Beyn US 4,687,983.

Bolz et al. do not disclose that the electronically controlled switch comprises a silicon conducting rectifier. However, Beyn teaches the desirability of providing an electronically controlled switch as a silicon conducting rectifier. See column 5, lines 40-57. From this teaching of Beyn, providing the electronically controlled switch of Bolz et al. as a silicon conducting rectifier would have been obvious to one of ordinary skill in the art at the time the invention was made. This would utilize a switch type with performance characteristics that are well established and reliable.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bolz et al. US 6,919,648 in view of Kodama et al. US 6,522,105.

Bolz et al. do not disclose that the electronically controlled switch comprises a transistor. However, Kodama et al. teach the desirability of providing an electronically controlled switch as a transistor. See column 13, lines 35-38 and 62-65. From this teaching of Kodama et al., providing the electronically controlled switch of Bolz et al. as

a transistor would have been obvious to one of ordinary skill in the art at the time the invention was made. This would utilize a switch type with performance characteristics that are well established and reliable.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bolz et al. US 6,919,648 in view of Kenyon US 4,438,342.

Bolz et al. do not disclose that the electronically controlled switch comprises an electromechanical relay. However, Kenyon teaches the desirability of providing an electronically controlled switch as an electromechanical relay. See column 3, lines 63-68. From this teaching of Kenyon, providing the electronically controlled switch of Bolz et al. as an electromechanical relay would have been obvious to one of ordinary skill in the art at the time the invention was made. This would utilize a switch type with performance characteristics that are well established and reliable.

Response to Arguments

Applicants' arguments filed August 16, 2006 have been fully considered but they are not persuasive.

Applicants assert that the new limitation directed to isolating the first and second batteries during engine start distinguishes over Bolz et al. However, as discussed above, this limitation presents impermissible new matter and non-distinguishing function. Hence, this argument is not persuasive.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Bottorff whose telephone number is (571) 272-6692. The examiner can normally be reached on Mon.-Fri. 7:30 a.m. - 4:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Ellis can be reached on (571) 272-6914. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Christopher Bottorff